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COP Lab

Michael Koester
C2 Systems Branch/JITC
COMM (520) 538-4230 DSN 879
koesterm@fhu.disa.mil

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COP Lab Mission



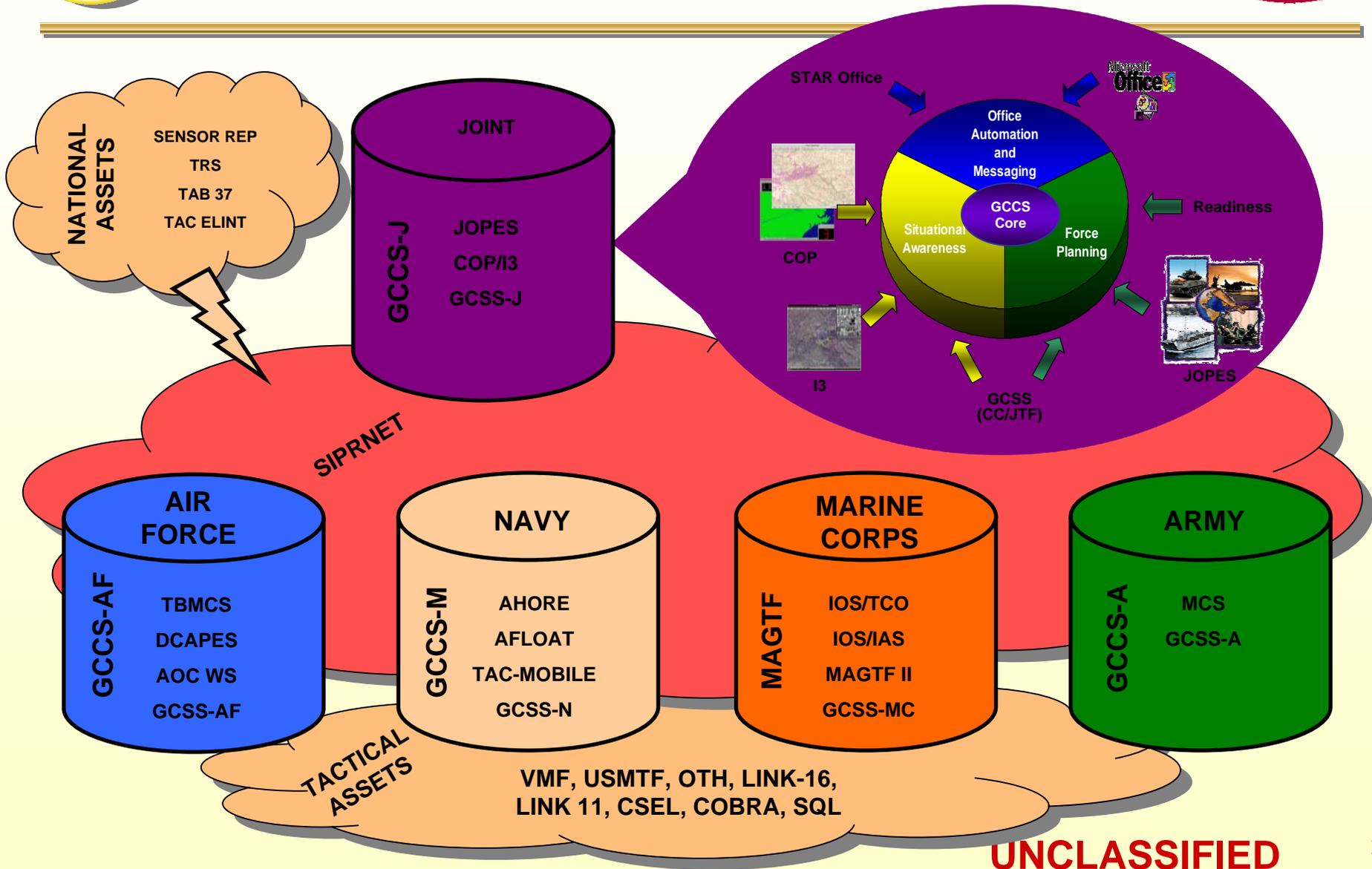
- **Mission**
 - Provide C2 interoperability testing & certification
- **Objectives:**
 - Ensure accurate information exchange
 - Verify interoperability
 - Assist in problem resolution
 - Develop rigorous and repeatable testing through configuration management and automated test tools

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C4I COMPLEXITIES



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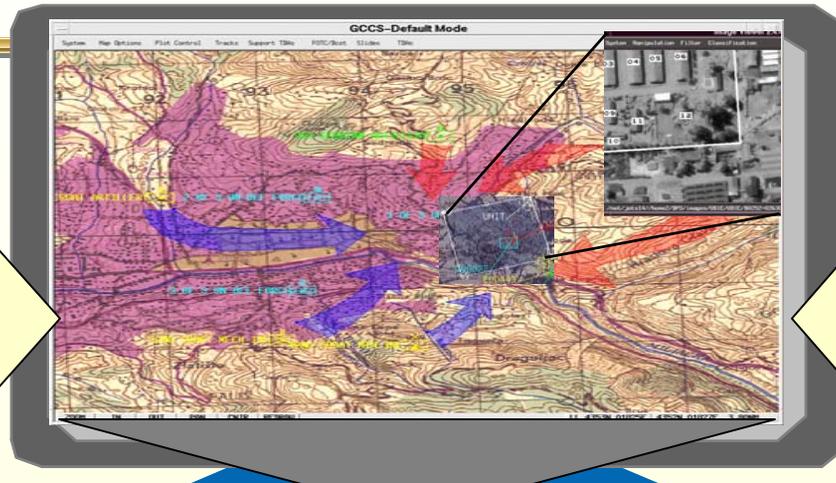


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Situational Awareness



Air Tracks
 ATO Targets
 Ground Units
 TBMs
 Maritime Tracks
 Overlays
 - Air Routes
 - Airspace Control
 - Weapons Range



NIMA Maps
 Targets
 - MIDB Xref
 - Imagery Xref
 NRTI Data
 Collection Mgmt
 3D Sensor Coverage
 Terrain Masking
 Sensor Status

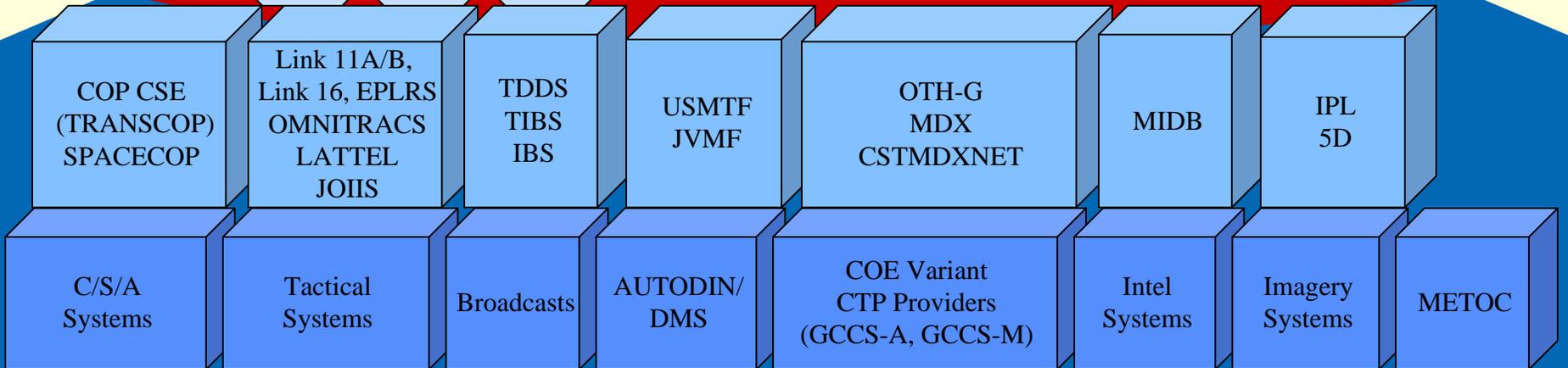


ADSI
MTDS

Radiant
Mercury

JTT
MATT

SIPRNET/GCCS LAN





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Why Interoperability



- **Inaccurate data**
- **Missing data**
- **Users not aware of inaccuracies**
- **Inaccuracies lead to confusion**
- **Critical information can be lost**
- **Identifies systems IOP limitations**
- **Ensures systems are interoperable when fielded**
- **Satisfies Joint Staff Cert Requirement**

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Categories & Environments



Categories

1. Standards Conformance

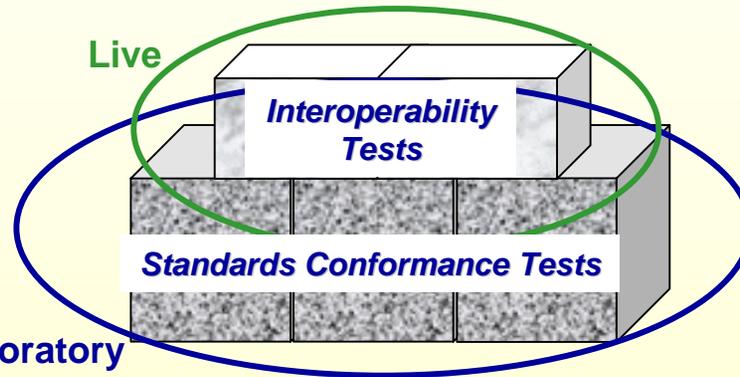
Standards conformance is the ability to adhere to rules contained in the applicable Military Standards (MIL-STDs) is tested in both environments.

2. Integrated Interoperability

Ensure that system effectively exchanges information with joint participants in both environments.

Note: MIL-STDs provide a necessary building block for ensuring interoperability, but are not sufficient to ensure that systems are interoperable in a joint environment.

Certification



Building Block Approach

Environments

1. Laboratory/HWIL

Comprehensive data collection for multiple tests under controlled conditions. Can include realistic loads and Hardware In The Loop. Test asset availability provides a representative sample of joint service participation.

2. Live Exercise/OT Event

Tests ability to effectively exchange information with joint participants in an exercise or test environment with conditions as realistic as possible. Ensures end-to-end interoperability (after component integration) to assure total system interoperability effectiveness

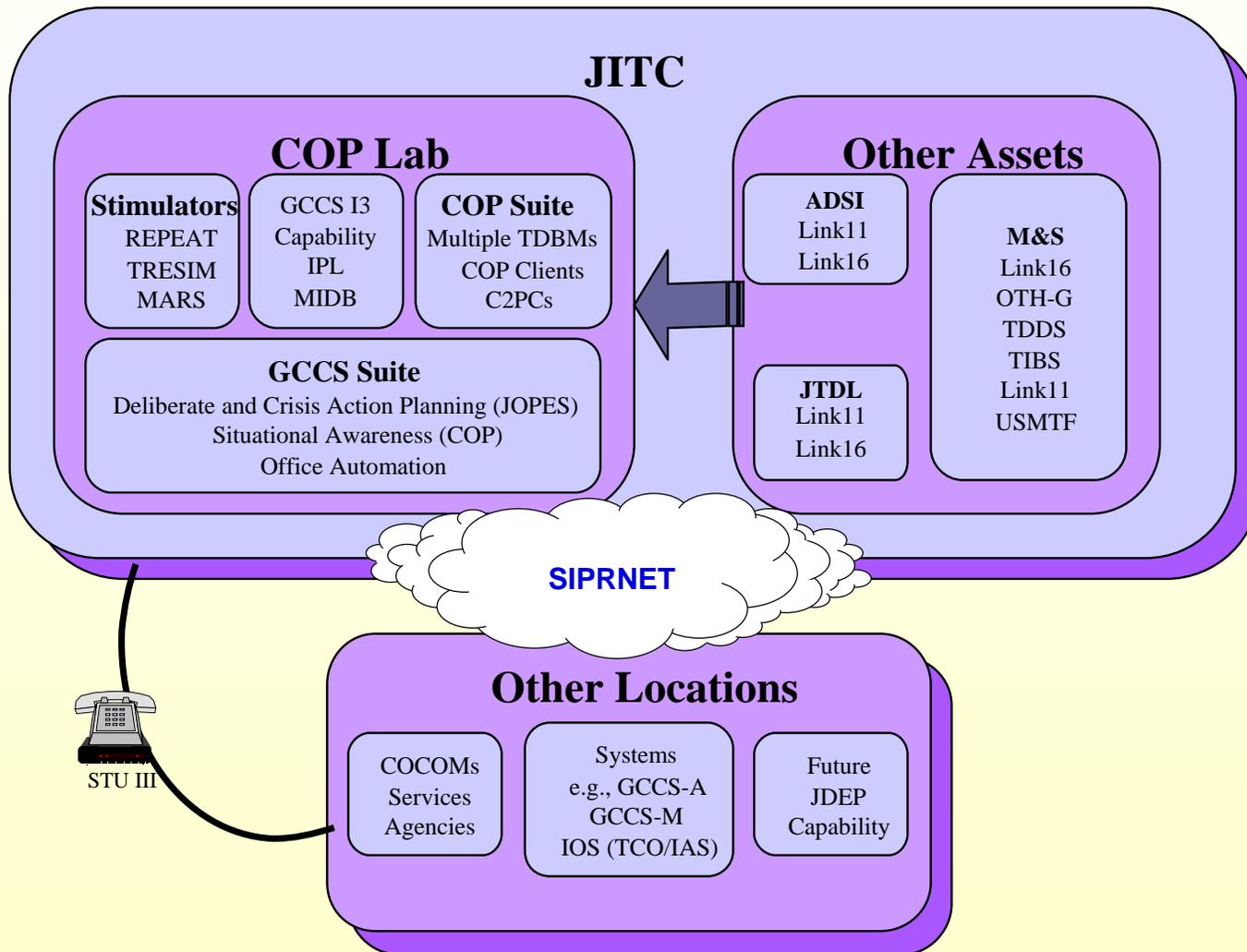
Tests are conducted in both environments to address both categories of interoperability

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JITC COP Capabilities



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Certification Status



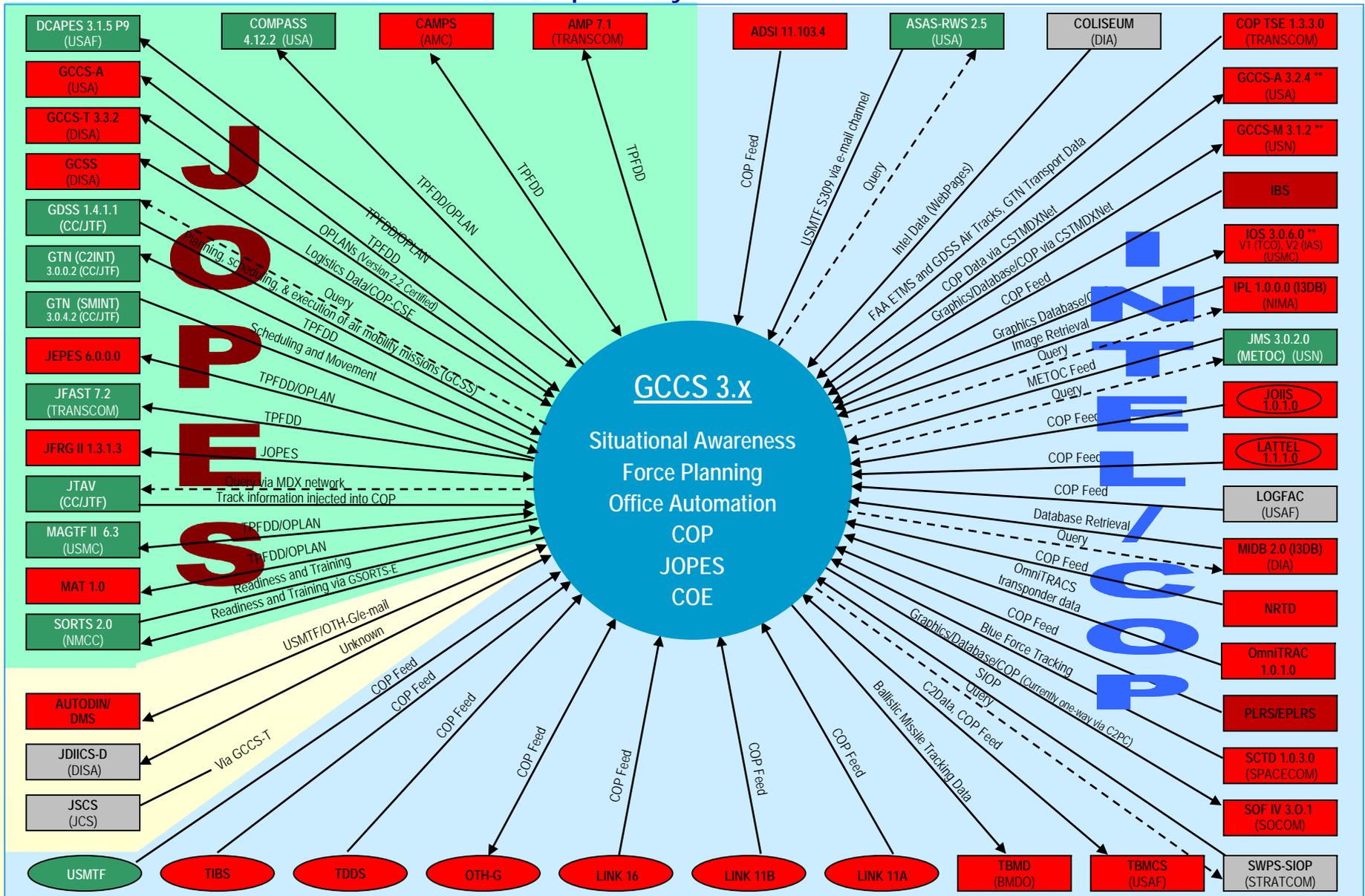
| SYSTEM | | JS CERTIFIED ORD/CDD/ CPD | JS CERTIFIED IKPP/IRS | INTEGRATED ARCH PRODUCTS | TEST CERTIFICATION STATUS |
|-----------------|--------------|---------------------------------|-----------------------------|--------------------------------|---------------------------------|
| JOINT | GCCS-J 3.x | NO | NO | NO | Specified Interface |
| | GCCS-J 4.x | NO | NO | NO | OT a January 2004 |
| | GTN-21 | 9 FEB 2001 | YES | NO | IOC OT August 04 |
| ARMY | GCCS-A B3 | NO | NO | NO | Specified Interface |
| | GCCS-A B4 | 16 NOV 2000 | YES | NO | GCCS-J OT a |
| | COMPASS | NO | NO | NO | GCCS-J OT a |
| NAVY | GCCS-M 3.x | 12 FEB 1999 | NO | NO | Specified Interface |
| | GCCS-M 4.x | 12 FEB 1999 | NO | NO | Coordinated w/PM |
| AIR FORCE | DCAPES 3.1.5 | 28 MAR 1996 | NO | NO | Specified Interface |
| | TBMCS 1.1.2 | 9 JUL 2001 | YES | NO | Specified Interface |
| MARINE CORPS | IOS V1 | NO | NO | NO | NONE |
| | MEF IAS | DRAFT | NO | NO | OT 3 / 4 QTR 04 |
| | MAGTF II 6.3 | NO | NO | NO | Specified Interface |

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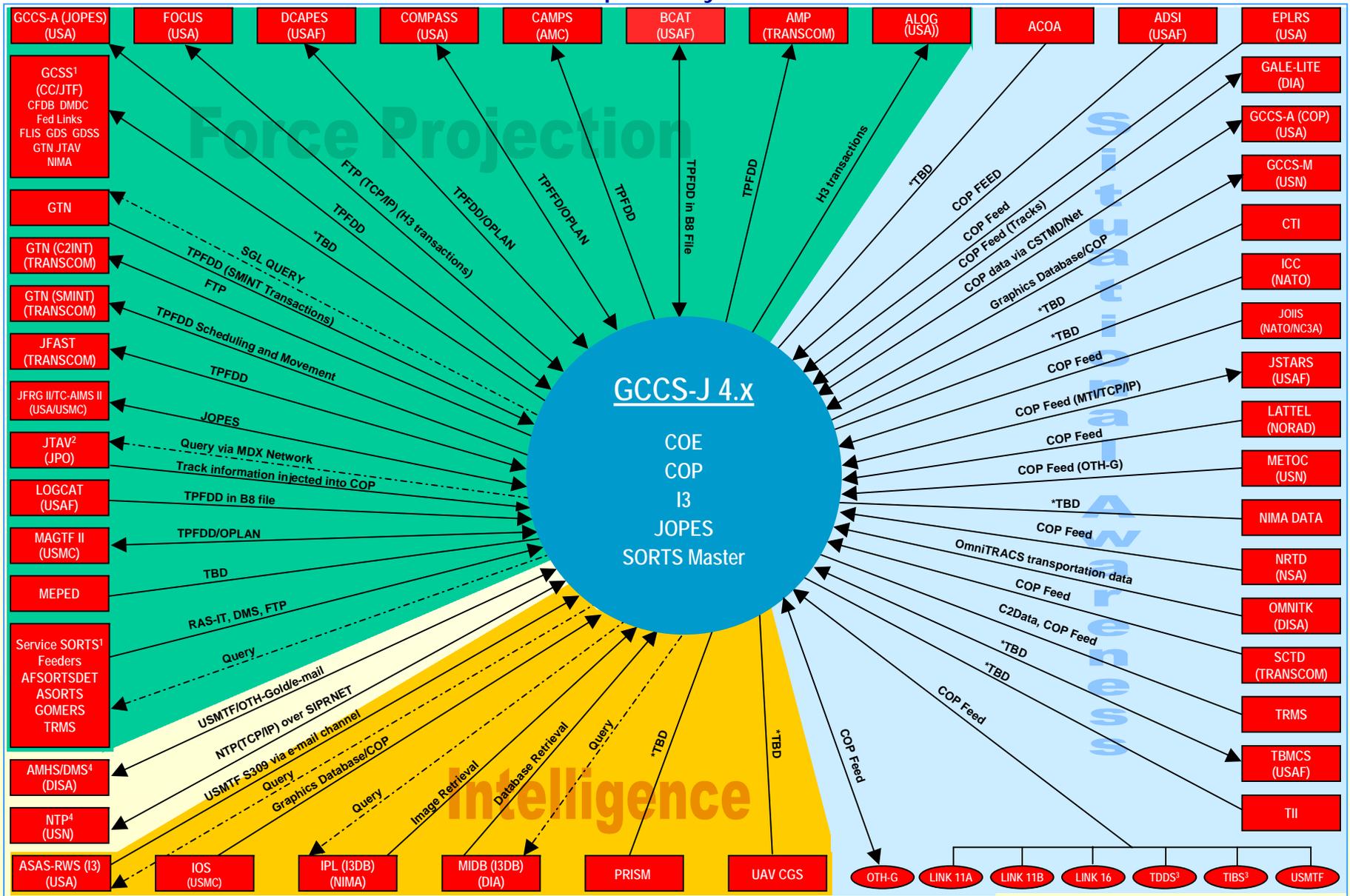
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GCCS 3.x Interoperability Certification Status*

As of 10/1/03



* Interfaces based on GCCS Requirements Implementation Document (RID) and EIP, 22 Dec 98; Master Interface Document (ICD), 31 May 01; and other requirement sources. For the latest copy, go to: <http://jitc.fhu.disa.mil/gccsiop/>
 ** Full capability not assessed. Certification is limited to the items addressed in the certification letter.



| | | | | | |
|--|-----------------------------|--|---------------|--|----------------|
| | JITC IOP Certified | | One-way Query | | Two-way Data |
| | Not Certified or Not Tested | | One-way Data | | Message Format |

Interfaces based on the GCCS-J V4.x Interface Control Document (ICD), 30 September 2003 (Updated 22 December 2003) and other requirement sources.
¹ Force Readiness ² Force Sustainment ³ Will become part of Integrated Broadcast Service
⁴ Cross Functional/Infrastructure
 *TBD Information unavailable in the GCCS-J V4.X, ICD



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Problems Identified



- **Joint Interoperability Tests**
 - **Situational Awareness**
 - Message/track not indicated as exercise
 - Displayed friendly track as hostile
 - Weapons status not correctly indicated
 - IFF changes not processed
 - Engagement status not properly displayed
 - Incompatibility between previous versions
 - **Force Planning and Execution**
 - Ability to change locked/validated requirements
 - Ability to directly update Combatant Command's TPFDD
 - Inability to translate TPFDD information between GCCS-J 3.x and GCCS 4.0

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Summary



- **Ensure systems are interoperable when fielded**
- **Ensure warfighters are aware of limitations and inaccuracies**
- **Identification of IOP requirements not specified in documentation**
- **Helps improve operating procedures**

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Contact Information

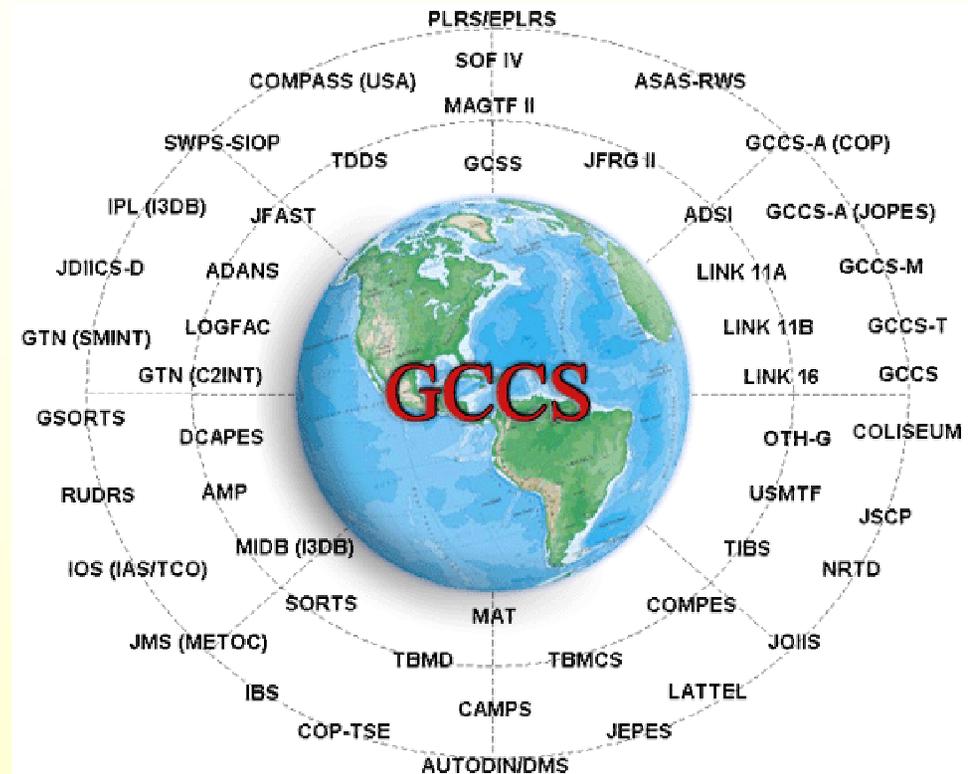


POC:

Mr. Michael Koester
 C2 Systems Branch/JITC
 Comm (520) 538-4230
 DSN 879-4230
 koesterm@fhu.disa.mil
 koesterm@fhu.disa.smil.mil

Web URLs:

<http://jitc.fhu.disa.mil/gccsiop>
<http://jitc.fhu.disa.mil/cop>
<http://199.208.204.125/gccsiop/index.html>



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BACKUP SLIDES

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ACRONYMS

| | | | | | |
|------------|--|----------------|--|------------------|--|
| A | | G | | O | |
| ACOA | Alternative Courses of Action | GALE-LITE | Generic Area Limitation Environment-Lite System | OMNITK | OmniTRACS Mobile Information Management System |
| ADANS | AMC Deployment Analysis System | GCCS | Global Command and Control System | OPLAN | Operation Plan |
| ADSI | Air Defense System Integrator | GCCS-A (COP) | Global Command and Control System - Army | OTH-G | Over-the-Horizon Targeting GOLD Message format |
| AF | Air Force | GCCS-A (JOPES) | Global Command and Control System - Army | P | |
| AFSORTSDET | Air Force SORTS Data Entry Tool | GCCS-M | Global Command and Control System-Maritime | PLRS | Position Location Reporting System |
| ALOG | Army Global Command and Control System for Logistics | GCCS | Global Combat Support System | PRISM | Planning tool for Resource Integration Synchronization and Management |
| AMC | Air Mobility Command | GDDS | Global Decision Support System | R | |
| AMHS | Automated Message Handling System | GDS | Ground Data System | RANSCOM | Transportation Command |
| AMP | Analysis of Mobility Platform | GDSS | Global Decision Support System | RWS | Remote Workstation |
| ASAS | All Source Analysis System | GOMERS | Global Online Marine Editing & Reporting System | S | |
| ASORTS | Army SORTS System | GSORTS | Global Status of Resources and Training System | SCTD | Space Common Tactical Database |
| ATO | Air Tasking Order | GTN | Global Transportation Network | SIPRNET | SECRET Internet Protocol Router Network |
| AUTODIN | Automatic Digital Network | I | | SMINT | Scheduling and Movement Interface |
| B | | I3DB | Intelligence and Imagery Interface Database | SOCOM | Special Operations Command |
| BCAT | Beddown Capability Assessment Tool | IAS | Intelligence Analysis System | SOF IV(M)Special | Operations Forces Intelligence Vehicle IV(Migration) |
| BMDO | Ballistic Missile Defense Office | IBS | Integrated Broadcast Service | SORTS | Status of Resources and Training System |
| C | | ICC | Integrated Command and Control | SPACECOM | Space Command |
| C2 | Command and Control | ICD | Interface Control Document | STRATCOM | Strategic Command |
| C2INT | Command and Control Interface | ICIS | Integrated Consumable Item Support | SWPS-SIOP | Strategic War Planning System-Single Integrated |
| CAMPS | Consolidated Air Mobility Planning System | IOP | Interoperability | OPLAN | |
| CFDB | Current Forces Data Base | IOS | Intelligence Operations Server | T | |
| COLISEUM | Community On-Line Intelligence System for End-Users and Managers | IP | Internet Protocol | TADIL A/B | Link 11 / TADIL A/B |
| COMPASS | Computerized Movement Planning Status System | IPL | Imagery Product Library | TADIL J | Link 16 / TADIL J Interface |
| COMPES | Contingency Operations/Mobility Planning and Execution System | J | | TBD | To Be Determined |
| COP | Common Operational Picture | JDIICS-D | Joint Defense Information Infrastructure Control System-Deployed | TBMCS | Theater Battle Management Core Systems |
| CSE | Combat Support Element | JFAST | Joint Flow and Analysis System for Transportation | TBMD | Theater Ballistic Missile Defense |
| CTAPS | Contingency Theater Automated Planning System | JFRG | Joint Forces Requirements Generator | TC-AIMS II | Transportation Coordinators Automated Information for Movement System II |
| CTI | COP Transportation Interface | JITC | Joint Interoperability Test Command | TCP | Transmission Control Protocol |
| D | | JMS | Joint Meteorological and Oceanographic Segment | TCP/IP | Transmission Control Protocol/Internet Protocol |
| DARWIN | Dynamic Analytical Reporting Web-based Interactive Navigator | JMTK | Joint Mapping Tool Kit | TDDS | Tactical Data Distribution System |
| DB | Data Base | JOIIS | Joint OPS/INTEL Information System | TDIMF | Tactical Data Information Message Format |
| DCAPES | Deliberate Crisis Action Planning and Execution Segments | JOPES | Joint Planning & Execution System | TDS | Tactical Data System |
| DIA | Defense Intelligence Agency | JSTARS | Joint Surveillance Target Attack Radar System | TIBS | Tactical Information Broadcast System |
| DISA | Defense Information Systems Agency | JTAV | Joint Total Asset Visibility | TII | Trans Infrastructure Interface |
| DLA | Defense Logistics Agency | L | | TPFDD | Time-Phased Force and Deployment Data |
| DMDC | Defense Manpower Data Center | LATTEL | Lateral-Tell | TRANSCOM | Transportation Command |
| DMS | Defense Message System | LOGCAT | Logistics Contingency Assessment Tool | TRMS | Type Commanders Readiness Management System |
| E | | M | | U | |
| EPIP | Evolutionary Phase Implementation Plan | MAGTF II | Marine Air Ground Task Force II System | UAV GCS | Unmanned Aerial Vehicle Ground Control Station |
| EPLRS | Enhanced Position Location Reporting System | MAGTF | Marine Air-Ground Task Force | USA | United States Army |
| ETMS | Enhanced Traffic Management System | MDX | Mission Data Exchange | USAF | United States Air Force |
| F | | MEPED | Military Equipment Parameters Data Base | USMC | United States Marine Corps |
| FAA | Federal Aviation Agency | METOC | Metrology and Oceanography | USMTF | United States Message Text Format |
| FLIS | Federal Logistics Information System | MIDB | Modernized Intelligence Database | USN | United States Navy |
| FOCUS | Force Operation Characteristics Unified System | N | | | |
| FTP | File Transfer Protocol | NIMA Data | NIMA Site Tables | | |
| | | NIMA | National Imagery and Mapping Agency | | |
| | | NRO | National Reconnaissance Office | | |
| | | NRTD | Near Real Time Dissemination | | |
| | | NTP Time | US Naval Observatory Time Sync Interface | | |

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Common Tactical Picture



- **The Common Tactical Picture (CTP) is derived from the CTD and other sources and refers to the current depiction of the Battlespace for a single operation within a CINC's AOR including current, anticipated or projected, and planned disposition of hostile, neutral, and friendly forces as they pertain to US and multinational operations ranging from peacetime through crisis and war. The CTP includes force location, real time and non-real-time sensor information, and amplifying information such as METOC, SORTS, and JOPES.**



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Common Operational Picture



- **The COP is the integrated capability to receive, correlate, and display a Common Tactical Picture (CTP)**
 - Planning applications and theater-generated overlays/projections may include location of friendly, hostile, and neutral units, assets, and reference points
 - Battleplans
 - Force position projections
- **The COP may include information relevant to the tactical and strategic level of command.**
 - Geographically oriented data
 - Planning data from JOPES
 - Readiness data from SORTS
 - Intelligence (including imagery overlays)
 - Reconnaissance data from the Global Reconnaissance Information System (GRIS)
 - Weather from METOC
 - Predictions of nuclear, biological, and chemical (NBC) fallout
 - Air Tasking Order (ATO) data

Reference: CJCSI 3151.01, 10 June 1997

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Joint C4I Interoperability Directives



DoDD 4630.5

Forces must have compatible, interoperable, and integrated C3I systems.

DoDD 5105.19

DISA shall ensure end-to-end interoperability

CJCSI 6212.01B

JITC is the sole certifier of all NSS & ITS systems for Compatibility, Interoperability, and Integration throughout the life-cycle.

CJCSI 3170.01B

Establishes policies and procedures for requirements generation (MNSs, CRDs, ORDs). Mandates interoperability KPP for CRDs and ORDs.

DoDI 4630.8

All NSS and IT Systems are for joint use and shall be certified by DISA (JITC) in the acquisition process.

DoD Regulation 5000

Interim guidance issued

DoD 5000.2

Rescinded



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COP Complexities



| Main COP Functions | Tracks | Main Comms Channels | Main Message Formats | Test Management |
|----------------------------|-----------------|----------------------------|-----------------------------|------------------------|
| Dissemination | PIM tracks | Network | TADIL A | Scenario |
| Configuration | Platform tracks | CSTMDXNET | TADIL J | Message sets |
| Track Management | ELINT Tracks | Serial | TIBS | Analysis tools |
| Filtering | Acoustic Tracks | STU III | TRE TABULAR | Simulation tools |
| Analyst Messages (OpNotes) | Unit Tracks | MDX | USMTF | Stimulation tools |
| Correlation | | Link-11 PIH | OTH-Gold | Recording tools |

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Tests



- **Developmental**
 - Assess Functionality @ Keystroke Level
- **Operational**
 - Operational Effectiveness & Suitability
- **Interoperability**
 - Systems can Operate Effectively with one another

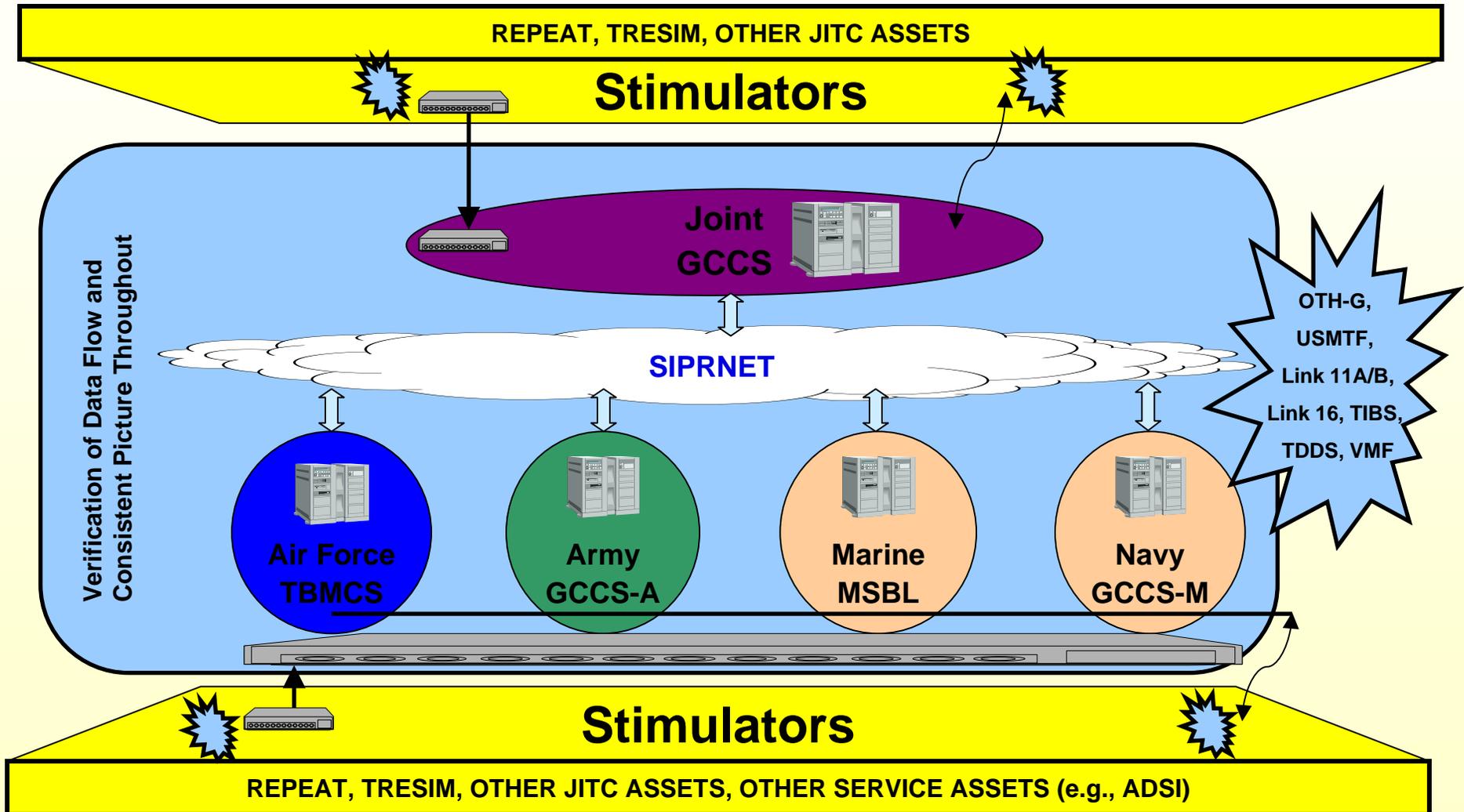


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Test Concept

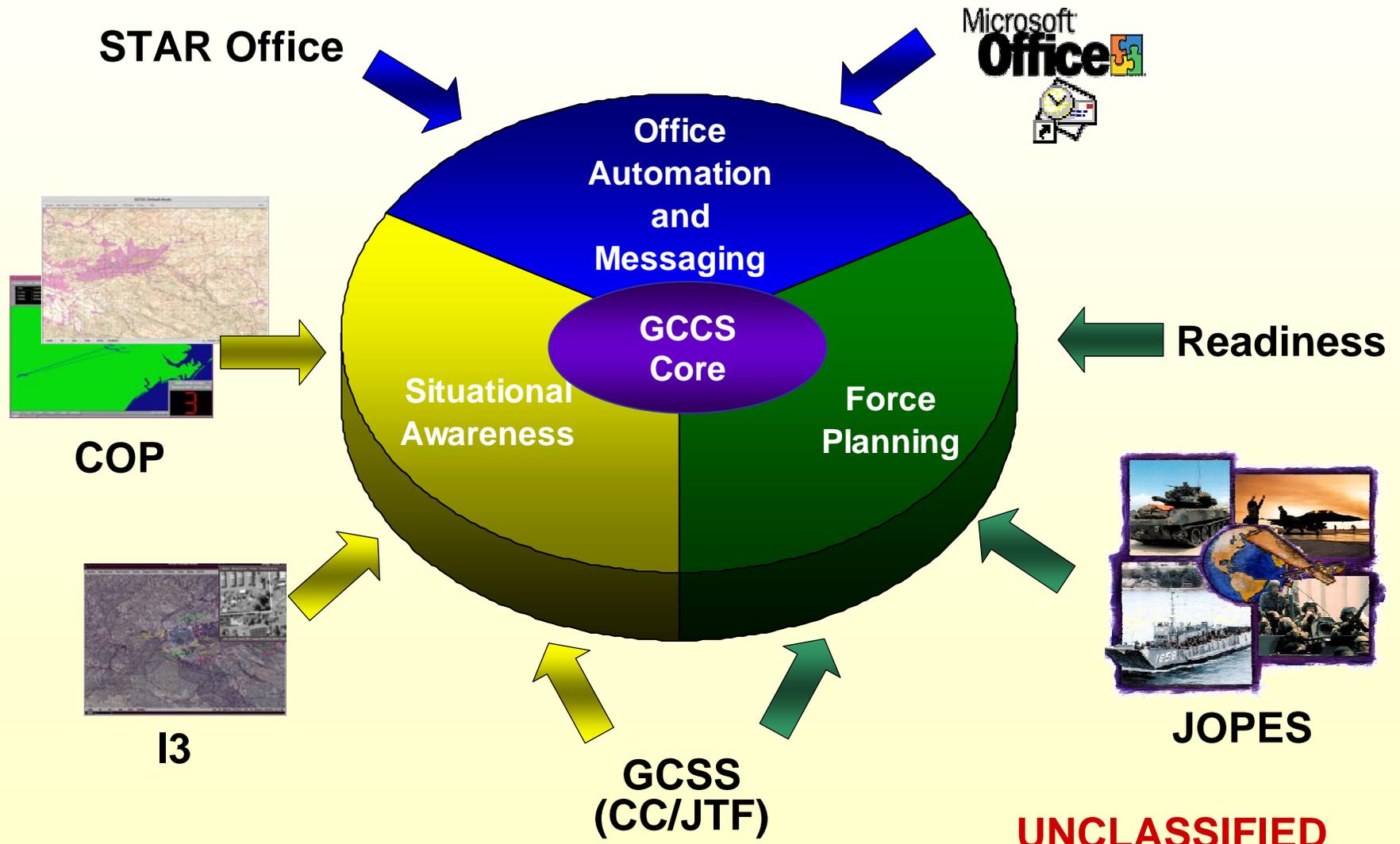


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GCCS



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Top Tier C2 Systems

